

REMARKS

The present application was filed on November 13, 1998 with claims 1-20. In the outstanding Office Action dated June 19, 2002, the Examiner: (i) rejected claims 1, 6, 12 and 16 under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,160,804; (ii) rejected claims 1, 2, 6, 7, 12 and 16 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,240,089 to Okanou et al. (hereinafter "Okanou"); (iii) rejected claims 3, 4, 8, 9, 11, 13, 14, 17, 18 and 20 under 35 U.S.C. §103(a) as being unpatentable over Okanou in view of U.S. Patent No. 6,272,148 to Takagi et al. (hereinafter "Takagi"); and (iv) indicated that claims 5, 10, 15 and 19 would be allowable if rewritten in independent form including all limitations of their respective base claim and any intervening claims.

In this response, Applicants: (i) cancel claims 2 and 7 without prejudice; (ii) amend claims 1, 5, 6, 10, 15 and 19; and (iii) traverse the various double patenting, §102(b) and §103(a) rejections of claims 1, 3-6 and 8-20 for at least the following reasons. Further, Applicants incorporate by reference herein all remarks made in their previous response dated April 5, 2002.

Applicants wish to thank the Examiner for acknowledging allowable subject matter in claims 5, 10, 15 and 19. Such claims have been rewritten in independent form including all limitations of their respective base claims and any intervening claims. It is believed that claims 5, 10, 15 and 19 are now in condition for allowance.

Regarding the §102(e) rejections to independent claims 1 and 6, Applicants respectfully assert that Okanou fails to teach or suggest all of the limitations defined in such claims. Nonetheless, Applicants have amended such independent claims to further clarify the subject matter of the invention. Namely, Applicants have amended claims 1 and 6 to recite that the mobile user station "automatically reassigns another address to be associated with one or more packets of the mobile user station when the station becomes associated with another network node of the communications system, the other address being a combination of the identifier of the mobile user station and an identifier of the other network node." Thus, as claims 1 and 6 further recite, "a network node in the communications system is not required to obtain additional address information to direct a packet associated with a call to or from the mobile user station." Support for the added language is found throughout the present specification, for example, at page 29, lines 3-11.

These limitations are clearly not taught or suggested by Okanoué. In Okanoué, as explained at column 7, the mobile station has two separate addresses associated therewith: (1) a specific identifier (or logical address); and (2) a location address. These two addresses must be sent to a so-called "home agent." All of the techniques described in Okanoué are designed to overcome problems with conventional multicasting approaches (column 1, lines 23 through 43). That is, problems exist in including certain mobile stations that are located in sub-networks of the overall communications network in a multicast group. Thus, all the techniques of Okanoué are related to controlling multicast groups. Accordingly, as further explained at column 7, the routing of packets in Okanoué is still subject to the requirement that a node look up additional information, such as which home agent the mobile terminal is connected to, before a packet can be routed to the mobile.

Thus, it is clear that there is no concept in Okanoué of a mobile user station automatically reassigning another address to be associated with one or more packets of the mobile user station when the station becomes associated with another network node of the communications system, such that a network node in the communications system is not required to obtain additional address information to direct a packet associated with a call to or from the mobile user station, as recited in claims 1 and 6.

For example, as explained at page 29, lines 3-11, of the present specification:

It is to be appreciated that one of the advantages of the addressing scheme of the invention, described above, is that the SNLA [subnetwork layer address] itself indicates the relative location of a mobile. Therefore, if a mobile moves (i.e., attaches itself to a new network node) during a call, it automatically changes the source address to the new SNLA in its packets. Since the correspondent mobile can recognize the mobile from the mobile ID portion of the SNLA, it knows that the mobile has changed its location. Therefore, the correspondent mobile stamps the destination field of its packets with the new SNLA. Without extra signaling messages, mobile locations are updated during a call. Since the system 100 is a packet-switched network and each packet is routed directly to the destination, the route is optimized automatically as well. This feature reduces the amount of signaling traffic significantly since a majority of the traffic, such as TCP/IP connections and voice calls, are two-way traffic (Underlining added for emphasis).

In contrast, in Okanoué, a mobile station must inform (via some signaling message) the home agent of a change in location so that packets can be properly directed thereto. This is not necessary in the invention of claims 1 and 6, since the mobile is able to automatically reassign its address and

thereby inform the communications system of its new address by transmitting packets with the reassigned address as the source address. In this manner, a network node in the communications system is therefore not required to obtain additional address information to direct a packet associated with a call to or from the mobile user station. As illustratively explained above, this is further facilitated by the correspondent mobile stamping the destination field of its packets with the new SNLA (address) reassigned by the source mobile. The multicasting techniques described in Okanou fail to teach or suggest such a dynamic addressing scheme.

Accordingly, Applicants assert that claims 1 and 6 are patentable over the cited reference and therefore allowable. Withdrawal of the rejections is respectfully requested.

Regarding the §102(e) rejections to independent claims 12 and 16, Applicants respectfully assert that Okanou fails to teach or suggest all of the limitations defined in such claims.

The invention of claim 12 is directed to a method for use in a network node of a packet-based multiaccess communications system, the communications system including a plurality of mobile user stations. The method comprises the steps of: (i) assigning an address to the network node, the address being a combination of an identifier of the network node and an identifier of an interface associated with the network node; and (ii) transferring packets to and from the network node in accordance with the address, such that the network node is able to move within the communications system in addition to the plurality of mobile user stations. Applicants amended claim 12 in their previous response to add the underlined claim language in an effort to further clarify the nature of the addressing technique of the invention. Claim 16 is an apparatus claim with similar limitations.

First, as originally asserted in Applicants' previous response, Okanou does not disclose an addressing format of a single address of a network node that comprises "a combination of an identifier of the network node and an identifier of an interface associated with the network node." Nor, as originally asserted in Applicants' previous response, does Okanou disclose that packets are transferred to and from the network node in accordance with the address, "such that the network node is able to move within the communications system in addition to the plurality of mobile user stations." These limitations are expressly recited in independent claims 12 and 16.

The Office Action, at the bottom of page 6 through the top of page 7, states that since Fig. 6 "shows multicasting for a host in a network including a sub-networks connected to one another whereby the sub-networks have nodes which accept a mobile host in the network," "this clearly reads

on the node being able to move within the system in addition to the user stations as in claims 12 and 16.” Applicants strongly disagree. There is nothing disclosed in Okanoué that indicates that anything but the mobile terminals can move. In fact, the addressing scheme employed by Okanoué could not support such a feature.

In contrast, as explained by way of example at page 9, line 22, through page 10, line 6, of the present specification:

The internode network 108 includes a plurality of network nodes 104 preferably interconnected with point-to-point wireless links 110. It is to be appreciated that each network node 104 serves as both a base station to the mobiles 102 directly communicating therewith and as an intermediate router for packets passing therethrough. That is, each network node provides wireless access to the mobile terminals and also acts as a switch. Some of network nodes are preferably connected via satellite or terrestrial links to external networks, e.g., fixed networks (not shown). These nodes have the additional functionality of a “gateway” which provides the interworking functions to maintain consistency with the protocols used in these external networks. Also, it is through the internode network 108 that the system connects with various service providers (not shown) capable of providing various multimedia-based services to the mobiles 102. Further, some of the network nodes may be airborne. Mobiles may move from the coverage area associated with one network node to the coverage area of another network node. Because the network nodes, like the mobile stations, are mobile, the system 100 is characterized by a constantly changing topology (Underlining added for emphasis).

Clearly, no base stations, routers or gateways are mobile in the Okanoué system.

Accordingly, Applicants assert that claims 12 and 16 are patentable over the cited reference and therefore allowable. Withdrawal of the rejections is respectfully requested.

Regarding the §103(a) rejections to claims 3, 4, 8, 9, 11, 13, 14, 17, 18 and 20 based on the combination of Okanoué and Takagi, Applicants respectfully assert that, since Takagi fails to remedy any of the above-described deficiencies associated with Okanoué, such dependent claims are patentable over such combination for at least the reasons given above with respect to independent claims 1, 6, 12 and 16. However, Applicants also assert that such dependent claims recite patentable subject matter in their own right.

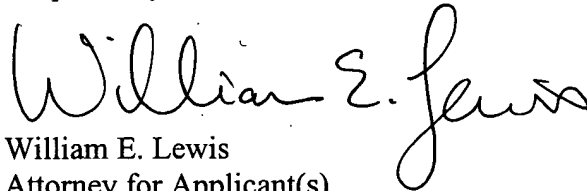
Regarding the double patenting rejection, Applicants assert that claims 1, 6, 12 and 16 are not obvious over claims 1-19 of U.S. Patent No. 6,160,804. Claims 1 and 6 of the present application recite that the mobile user station “automatically reassigns another address to be

associated with one or more packets of the mobile user station when the station becomes associated with another network node of the communications system.” This feature is not obvious in view of claims 1-19 of U.S. Patent No. 6,160,804. Claims 12 and 16 of the present application recite that “the network node is able to move within the communications system in addition to the plurality of mobile user stations.” This feature is not obvious in view of claims 1-19 of U.S. Patent No. 6,160,804. Nonetheless, Applicants reserve the right to file a terminal disclaimer if the double patenting rejection is not withdrawn in the next Office Action.

Attached hereto is a marked-up version of the changes made to the claims by the present Amendment.

In view of the above, Applicants believe that claims 1, 3-6 and 8-20 are in condition for allowance, and respectfully request favorable reconsideration.

Respectfully submitted,

A handwritten signature in black ink that reads "William E. Lewis". The signature is fluid and cursive, with the first and last names being more prominent than the middle initial.

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Please cancel claims 2 and 7 without prejudice.

Please amend claims 1 5, 6, 10, 15 and 19 as follows:

1. (Twice Amended) A method for use in a mobile user station of a packet-based multiaccess communications system, comprising the steps of:

assigning an address to be associated with one or more packets of the mobile user station, the address being a combination of an identifier of the mobile user station and an identifier of a network node in the communications system with which the mobile user station is currently associated; and

automatically reassigning another address to be associated with one or more packets of the mobile user station when the station becomes associated with another network node of the communications system, the other address being a combination of the identifier of the mobile user station and an identifier of the other network node;

[transferring packets to and from the mobile user station in accordance with the address,] such that a network node in the communications system is not required to obtain additional address information to direct a packet associated with a call to [and] or from the mobile user station.

5. (Amended) [The method of Claim 4,] A method for use in a mobile user station of a packet-based multiaccess communications system, comprising the steps of:

assigning an address to the mobile user station, the address being a combination of an identifier of the mobile user station and an identifier of a network node in the communications system with which the mobile user station is currently associated; and

transferring packets to and from the mobile user station in accordance with the address, such that a network node in the communications system is not required to obtain additional address information to direct a packet to and from the mobile user station;

wherein the address of the mobile user station further includes an application flow identifier, and further wherein the address of the mobile user station is a concatenation of the identifiers of the network node, the mobile user station and the application flow.

6. (Twice Amended) Apparatus in a packet-based multiaccess communications system, comprising:

a mobile user station configured to [respond to an address assigned] assign an address to be associated with one or more packets of [to] the mobile user station, the address being a combination of an identifier of the mobile user station and an identifier of a network node in the communications system with which the mobile user station is currently associated, the mobile user station automatically reassigning another address to be associated with one or more packets of the mobile user station when the station becomes associated with another network node of the communications system, the other address being a combination of the identifier of the mobile user station and an identifier of the other network node, such that [packets are transferred to and from the mobile user station in accordance with the address and] a network node in the communications system is not required to obtain additional address information to direct a packet associated with a call to [and] or from the mobile user station.

10. (Amended) [The apparatus of Claim 9,] Apparatus in a packet-based multiaccess communications system, comprising:

a mobile user station configured to respond to an address assigned to the mobile user station, the address being a combination of an identifier of the mobile user station and an identifier of a network node in the communications system with which the mobile user station is currently associated such that packets are transferred to and from the mobile user station in accordance with the address and a network node in the communications system is not required to obtain additional address information to direct a packet to and from the mobile user station;

wherein the address of the mobile user station further includes an application flow identifier, and further wherein the address of the mobile user station is a concatenation of the identifiers of the network node, the mobile user station and the application flow.

15. (Amended) [The method of Claim 14,] A method for use in a network node of a packet-based multiaccess communications system, the communications system including a plurality of mobile user stations, comprising the steps of:

assigning an address to the network node, the address being a combination of an identifier of the network node and an identifier of an interface associated with the network node; and

transferring packets to and from the network node in accordance with the address, such that the network node is able to move within the communications system in addition to the plurality of mobile user stations;

wherein the address of the network node further includes an application flow identifier, and further wherein the address of the network node is a concatenation of the identifiers of the network node, the interface of the network node and the application flow.

19. (Amended) [The apparatus of Claim 18,] Apparatus in a packet-based multiaccess communications system, the communications system including a plurality of mobile user stations, comprising:

a network node configured to respond to an address assigned to the network node, the address being a combination of an identifier of the network node and an identifier of an interface associated with the network node such that packets are transferred to and from the network node in accordance with the address, and the network node is able to move within the communications system in addition to the plurality of mobile user stations;

wherein the address of the network node further includes an application flow identifier, and further wherein the address of the network node is a concatenation of the identifiers of the network node, the interface of the network node and the application flow.